

REMARKS**Status of Claims:**

Claims 1-31 are pending in the application. Each claim defines an invention that is novel and unobvious over the cited art. Favorable consideration of this case is respectfully requested.

Support for the recitations added by amendment.

Claims 1, 3, 7, and 19 are amended to recite an "optically-optimized polymer" and to define "optically-optimized" to include specific ranges of refractive index and extinction coefficient. Support for the amended recitations was provided in the specification as originally filed at page 7, lines 21-24. The instant amendment is believed to introduce no new matter.

Declaration Under 37 CFR 1.131:

The Examiner considered the declaration filed November 24, 2003, but considered it ineffective to overcome the Pike (6,420,097) reference. The Examiner cited, *inter alia*, *In re Harry*¹ for the proposition that the declaration failed to show diligence from a time prior the Pike reference. The Declaration filed herewith avers to a reduction to practice prior to the filing date of the Pike reference as required by the Examiner in the Advisory Action of June 25, 2004.

The *Greenwood* case² discussed *Harry* and the requirements set forth in 37 CFR 1.131. "Under Rule 131, publications can be antedated and eliminated as references upon the filing of an affidavit by the inventor showing completion of the invention before the dates of the publications."³ Moreover, Rule 131 sets forth two ways to antedate a reference publication. *Greenwood*, 711 F.Supp. at 32 ("The two ways to do so are..."). The first way, the method chosen by the Applicants in the Declaration of November 24, 2003, is to "show 'reduction to practice' of the invention prior to the date of the

¹ *In re Harry*, 333 F.2d 920, 142 USPQ 164 (CCPA 1964).

² *Greenwood v. Seiko Instruments & Electronics, Ltd.*, 711 F.Supp. 30 (D. DC 1989).

³ *Greenwood*, 711 F.Supp. at 32.

reference.”⁴ The Examiner stated that the evidence submitted was insufficient to show “diligence.” While specifically not admitting to any alleged lack of diligence, the Applicants note that the “diligence” requirement relates to the second of two means to disqualify a reference.⁵ The two methods are (1) reduction to practice, or (2) conception and diligence.

Figure 4, as described in the specification, as filed, shows reduction to practice of the entire invention, as claimed.⁶ The Examiner stated that “the only mention of Figure 4 in the specification is in the Brief Description of the Drawings.” However, the Examiner’s attention is directed to page 9 of the specification which demonstrates the successful testing of the entire invention, as claimed:

The last step of the process involves transferring of the developed image in the top layer 7, through the underlayer 6, and stopping on substrate 1 by known, oxygen-reactive ion etching techniques. Oxygen-reactive ion etching techniques are well known in the art and equipment to etch film is commercially available. The developed film has high aspect ratio, high etch resistance, enhanced resolution, and straight wall profiles.

Turning now to Figure 3, an embodiment of the present invention provides control over the extent to which the lateral trimming proceeds. The variation in CD with respect to etching time for isolated lines with two different widths is shown in Figure 3. The lines as photo-imaged were 185 nm (L-181) and 220 nm (L-182) before they were transferred into the underlayer. SEM micrographs of the unetched L-181 sample and 60% overetched L-181 sample are shown in Figure 4 where one can observe the drastic reduction in line-width. At the end of the etch (0% overetch), there is a CD loss which can be determined by extrapolating the dashed lines and subtracting this value from the as-imaged CD. As the patterns were overetched longer, an approximately linear decrease in CD was observed.

Figure 4 presents a successful test of the entire invention at a date prior to the publication of the Pike reference. In view thereof, the Applicants respectfully request that the Pike

⁴ *Greenwood*, 711 F.Supp. at 32.

⁵ The two ways to antedate a reference publication are to show reduction to practice, “or (2) show conception of the invention prior to the date and due diligence.” *Greenwood*, 711 F.Supp. at 32.

⁶ “Reduction to practice means that [the inventor] must show that the invention as claimed in the patent was actually constructed and sufficiently tested to demonstrate that it will work for its intended purpose.” *Greenwood*, 711 F.Supp. at FN1; *Barmag Barmer Maschinenfabrik v. Murata Machinery Ltd*, 731 F.2d 831, 221 USPQ 561 (Fed.Cir.1984).

reference be disqualified and rejections based thereon be withdrawn.

Rejections Under 35 U.S.C. § 112, 2nd Paragraph:

Claims 1-26 and 31 were rejected under 35 U.S.C. § 112, 2nd Paragraph, as being indefinite over the recitation "tuned polymer."

The instant amendment cancels the objected to phrase and substitutes the recitation "optically-optimized." The amended recitation was supported and defined in the original specification.

In view of the instant amendment, the Applicants respectfully request the withdrawal of the present rejection.

Rejection Under 35 U.S.C. § 103(a):

Claims 1-8, 12, 13, 17, 18, 20, and 22-30 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Pike (6,420,097) in view of allegedly admitted prior art.

The Applicant has not characterized any reference as "prior art" and expressly denies any such "admission."

In view of the discussion of the declaration (see above), the Applicants respectfully request the withdrawal of the Pike reference.

In the alternative, the Applicants respectfully traverse the rejection over Pike. To establish *prima facie* obviousness of a claimed invention, all the claim recitations must be taught or suggested by the prior art. *In re Royka*.⁷ All words in a claim must be considered in judging the patentability of that claim against the prior art. *In re Wilson*.⁸ (MPEP § 2143.03). When evaluating the scope of a claim, every limitation in the claim must be considered. See e.g. *In re Ochiai*.⁹ (MPEP § 2144.08). The evidentiary record fails to teach each limitation of the present invention. Specifically, the Pike reference is silent as to an optically-optimized polymer. Because Pike does not teach each recitation of the present invention, the asserted reference cannot render obvious the present

⁷ *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974).

⁸ *In re Wilson*, 424 F.2d 1382, 165 USPQ 496 (CCPA 1970).

⁹ *In re Ochiai*, 71 F.3d 1565, 37 USPQ2d 1127 (Fed. Cir. 1995).

invention. In view thereof, the Applicants respectfully request the rejection be withdrawn.

Conclusion:

In view of the above, consideration and allowance are, therefore, respectfully solicited.

Accordingly, it is respectfully requested that the foregoing amendments be entered, that the application as so amended receive an examination on the merits, and that the claims as now presented receive an early allowance.

In the event the Examiner believes an interview might serve to advance the prosecution of this application in any way, the undersigned attorney is available at the telephone number noted below.

Applicant hereby authorizes the Commissioner to charge Deposit Account No. 22-0185 in the amount of \$110.00 for a one month extension of time and any other fees deemed necessary or credit any overpayment associated with this communication.

Respectfully submitted,



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